

## Skills and difficulties in the role of nurses in aeromedical transport

Marcelo dos Santos Rodrigues<sup>1</sup>, Hennã Cardoso de Lima<sup>2</sup>, Iranete Pereira Ribeiro<sup>1</sup>, Mário da Cruz Cabral Neto<sup>2</sup>, Niceane dos Santos Figueiredo Teixeira<sup>2</sup>, Breno Lins Alencar e Silva<sup>2</sup>, Geyza Dias Araújo<sup>3</sup>, Shelsea Brandão do Amaral<sup>4</sup>, Gabriel Miranda Bezerra<sup>5</sup>, Carolyne Sousa Araújo<sup>5</sup>, Fernanda da Silva Lima<sup>6</sup>, Patrícia dos Santos Moutinho Coelho<sup>6</sup>, Élen Gabriela Sales Costa<sup>6</sup>, Tainara Cristina Lopes Bastos<sup>6</sup>, Patrick do Nascimento Viana<sup>7</sup>, Regiane Suelen Moura da Silva<sup>7</sup>, Mariana Valente de Oliveira<sup>8</sup>, Lauricéia Valente de Oliveira<sup>9</sup>, Elias Costa Monteiro<sup>10</sup>, Raimunda de Fátima Carvalho Prestes<sup>11</sup>, Sheyla Cristina Ferreira de Magalhães<sup>12</sup>, Francisco Ocian de Araújo Júnior<sup>12</sup>, Layse Viana Figueiredo Garcia<sup>12</sup>, Naiade Moreira de Oliveira<sup>13</sup>, Emanuel da Silva Campos<sup>14</sup>, Mauro Sávio Sarmento Pinheiro<sup>14</sup>, Daiane Sabrina Neves Oliveira<sup>14</sup>, Kelly Pinheiro da Costa Pinheiro<sup>14</sup>, Vera Lúcia Queiroz Corrêa Vieira<sup>14</sup>, Gabriel Furtado de Carvalho<sup>14</sup>, Fabiane Cristina Nunes da Silva<sup>14</sup>, Adriana Santos Araújo<sup>14</sup>, Maria Antonieta Bezerra Falcão<sup>14</sup>, Thaisha Beatriz Viana Rodrigues<sup>14</sup>, Bruna Carolina da Trindade Monteiro da Silva<sup>14</sup>, Arley Ribeiro Nunes<sup>14</sup>, Carlos Eduardo Castro Freitas Silva<sup>14</sup>, Maria Janaína de Souza Maciel<sup>14</sup>, Emanuele Cardoso Costa<sup>14</sup>, Cristiane Costa da Cruz<sup>14</sup>, Rodrigo Coimbra de Melo<sup>14</sup>, Ruthlene Freitas Gonçalves<sup>14</sup>, Jeferson Pena Carneiro<sup>14</sup>, Gabriela da Silva Palheta<sup>14</sup>, Monize Lopes de Araujo Gomes<sup>14</sup>, Marcilene de Brito Caxias<sup>14</sup>, Aline Cristina Silva Ferreira<sup>14</sup>, Elem Cristina da Silva Barbosa de Souza<sup>14</sup>, Dermison Leão Pereira<sup>14</sup>, Josieli da Silva melo Pinheiro<sup>14</sup>, Erika Renata Castilho Carvalho Sarraff<sup>14</sup>, Tamires de Cassia Silva da Cruz<sup>14</sup>, Natrícia Hellen Batista Afonso<sup>14</sup>, Mauro Sávio Sarmento Pinheiro<sup>14</sup>, Lucas Lopes Friás<sup>14</sup>, Liene Alves Braga<sup>14</sup>, Glauce Kelly Ribeiro de Souza<sup>2</sup>, Bruna Ribeiro de Araújo Lira<sup>15</sup>, Mariana Elizabeth Lopes de Sales<sup>16</sup>, Wanda Carla Conde Rodrigues<sup>17</sup>, Danielle Oliveira Maciel<sup>18</sup>, Bruna Barros de Melo<sup>2</sup>, Betyana Alves de Sousa<sup>19</sup>, Simone Aguiar da Silva Figueira<sup>20</sup>, Raimundo Lima Monteiro<sup>21</sup>, Gilvana Rodrigues de Oliveira<sup>22</sup>, Elyade Nelly Pires Rocha Camacho<sup>23</sup>, Raquel Fernandes Costa<sup>24</sup>, Rosinelma do Socorro Nunes Gonçalves<sup>2</sup>, Paula Nayara Barbosa Simplício<sup>2</sup>, Maicon de Araujo Nogueira<sup>25,\*</sup>, Jofre Jacob da Silva Freitas<sup>26</sup>, Ilma Pastana Ferreira<sup>27</sup>

- <sup>1</sup>Nurse, Master's student in Health Education in the Amazon (ESA), Stricto Sensu Postgraduate Program, Professional Master in Health Education in the Amazon, State University of Pará (UEPA), Belem, Para, Brazil
- <sup>2</sup>Nurse. University of Amazon (UNAMA), Belem, Para, Brazil.
- <sup>3</sup>Doctor. University Center of Várzea Grande (UNIVAG), Mato Grosso, Brazil.
- <sup>4</sup>Doctor. Faculty of Medical Sciences of Paraíba (FCM-PB), Brazil
- <sup>5</sup>Doctor. Presidente Antônio Carlos University Center (UNITPAC), Araguaína, Tocantins, Brazil.
- <sup>6</sup>Nurse. Federal University of Para (UFPA), Belem, Para, Brazil.
- <sup>7</sup>Nurse, Metropolitan University Center of the Amazon (UniFAMAZ), Belem, Para, Brazil.
- <sup>8</sup>Medicine student. Centro Universitário do Para (CESUPA), Belem, Para, Brazil.
- <sup>9</sup>Anesthesiologist. Master's student in Strategic Direction and Management in Health Organizations at the European University of the Atlantic. Master's student in Strategic Management and Health Organization Management at the International Ibero-American University. Preceptor of the Undergraduate Program in Medicine at the Federal University of Pará (UFPA), João de Barros Barreto University Hospital (HUJBB), Belem, Para, Brazil.
- <sup>10</sup>Nursing student, Faculdade Pan Amazônia (FAPAN), Belém, Pará, Brasil.
- <sup>11</sup>Nurse. Universidade Paulista (UNIP), Belem, Para, Brasil.
- <sup>12</sup>Nurse. State University of Para (UEPA), Belem, Para, Brasil.
- <sup>13</sup>Doctor, Federal University of Pará (UFPA), Belem, Para, Brazil.
- <sup>14</sup>Nursing student, Escola Superior da Amazônia (ESAMAZ), Belem, Para, Brazil.
- <sup>15</sup>Nurse. Centro Universitário do Para (CESUPA), Belem, Para, Brazil.
- <sup>16</sup>Nurse. Master's Student, Postgraduate Program Stricto Sensu, Master's Degree in Risk Management and Natural Disasters, Federal University of Para (UFPA), Belem, Para, Brazil.
- <sup>17</sup>Physiotherapist. Master. Metropolitan University Center of the Amazon (UniFAMAZ), Belem, Para, Brazil.
- <sup>18</sup>Nurse, João Barros Barreto University Hospital (HUJBB), Federal University of Para (UFPA), Belem, Para, Brazil.
- <sup>19</sup>Nurse. Universidade Anhanguera (UNIDERP), Campo Grande, Mato Grosso do Sul, Brasil.
- <sup>20</sup>Nurse, Master in Health Education in the Amazon, PhD student, Stricto Sensu Graduate Program, Professional Doctor degree in Health Education in the Amazon (ESA), State University of Para (UEPA). Professor at the State University of Para (UEPA), Campus Santarem, Para, Brazil.
- <sup>21</sup>Nurse, Assistant nurse at the Hospital de Clínicas, Federal University of Minas Gerais (UFMG), Minas Gerais, Brazil.
- <sup>22</sup>Nurse, Faculty of Theology, Philosophy and Human Sciences Gamaliel - FATEFIG, Tucuruí, Para, Brazil.
- <sup>23</sup>Master in Nursing, Federal University of Pará (UFPA). PhD in Tropical Diseases, Postgraduate Program in Tropical Diseases (PGDT), Nucleus of Tropical Medicine (NMT / UFPA), Belem, Para, Brazil.
- <sup>24</sup>Nurse, assistant nurse at the Hospital de Clínicas, Federal University of Minas Gerais (UFMG), Minas Gerais, Brazil.
- <sup>25</sup>Nurse, Master in Health Education in the Amazon, PhD student, Stricto Sensu Postgraduate Program, Professional Doctorate in Health Education in the Amazon (ESA), State University of Para (UEPA). Professor at State University of Para (UEPA). Professor at Escola Superior da Amazônia (ESAMAZ), Belem, Para, Brazil. \*E-mail: profmaiconnogueira@gmail.com +55 (91) 98043-6368
- <sup>26</sup>Biomedic. PhD in Cellular and Tissue Biology in the University of Sao Paulo. Full professor in undergraduate course in medicine and professional master's and doctorate courses in health education in the University of Para State (UEPA), Belem, Para, Brazil.
- <sup>27</sup>Nurse, PhD in Nursing from the Anna Nery School of Nursing, Federal University of Rio de Janeiro (UFRJ). Permanent Professor at the Postgraduate Program Stricto Sensu, Professional Doctorate in Health Education in the Amazon (ESA), State University of Pará (UEPA), Belem, Para, Brazil.

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**Keywords—** Nursing. Aeromedical transport. Intensive therapy.

**Abstract—** Objective: to describe the skills and difficulties in the role of nurses in aeromedical transport. Method: descriptive, exploratory study with a qualitative approach. Data were collected through in-depth interviews, from October to November 2019, with a sample of seven nurses who work in an aerospace transport service, located in the metropolitan region of Belém, State of Pará, Brazil. Data analysis was based on the thematic content analysis method proposed by Bardin. Result: four empirical categories emerged: "Attributions, competences and difficulties in the role of nurses in aeromedical transport; Considering the epidemiological reality and regional differences; The nurse as a member of the multidisciplinary team; prerequisites for performance". Conclusion: health professionals who work in air transport have different interpretations about the work they perform. In addition, the on-board nurse assumes a prominent position, their work is full of demands and challenges that require knowledge, skills, competences and attitudes to

*carry out the on-board service, aiming to maintain an efficient and effective practice, even in the face of adversities of this type of service.*

## I. INTRODUCTION

Nursing is one of the professions in the health area that conceives the human being in its fullness and, therefore, has the opportunity to experience new areas, not limited to conventional care situations<sup>1</sup>. In this context, the insertion of nurses in aerospace services emerges as possibilities for action, being supported by the resolution of the Federal Council of Nursing (COFEN) n. 551/2017, which regulates the role of nurses in pre-hospital mobile and inter-hospital care in an air vehicle<sup>2</sup>.

Aeromedical Transport (TAM) is described as the displacement of the patient and/or injured person in a critical condition, by air locomotion seeking transport under adequate and specialized, safe and immediate professional supervision, in the condition in which another type of transport is not available. available and/or climatic or environmental conditions do not allow its use, crossing geographic barriers for the removal of the patient in a short period of time<sup>3</sup>.

The Air Rescue (Aeromedical) consists in the search, location and rescue of people in situations of injury victims, or at risk of suffering injuries, in places of difficult access. The procedures and type of care performed by the aeromedical service demonstrated the relevance of this type of care for trauma patients, among other conditions, who required a reduced response time, specific care for the environment, fast transport and definitive treatment in a shorter period<sup>4</sup>.

The service using helicopters for the rescue and rescue of people, aims to provide pre-hospital care at the scene of the accident, adult and neonatal inter-hospital transport, removal of patients in difficult to reach places, aerial reconnaissance of the place of accidents, rescue, in addition to the support given to ground teams in mobile pre-hospital care<sup>5</sup>.

Aeromedical transport can be defined in two ways: rotating wing (helicopters), which is used for places with difficult access, due to having the possibility of landing in different types of locations, and fixed wing (planes) to travel great distances in a shorter period of time, given the clinical conditions of the patient and needing a runway for a qualitative landing<sup>6</sup>. A study conducted in the State of Santa Catarina shows the importance of using rotary-wing aircraft, revealing that in the two-year period (2014 to 2016) there were 1,071 calls carried out by the Air Operations Battalion (BOA) with the archangel helicopter

in the metropolitan region from Florianópolis – Santa Catarina, Brazil<sup>7</sup>.

Use of aircraft to rescue people began in 1870 in the Franco-Prussian war when military soldiers were removed from the battlefield with the aid of hot air balloons, during which 160 wounded people were rescued. The wars brought advances in medical science and health and in the production of technical-scientific knowledge, especially after the First World War. In Brazil, the Aeromedical Service is part of the Emergency Care Network (RAU) of the Ministry of Health (MS), with the use of aircraft such as helicopters and planes, to care for patients in urgent and emergency situations<sup>3</sup>.

The ambulance is a means of transport in which it is possible to carry out transportation by land, water and air, and is exclusively intended for the transport of patients. This type of service is performed by several types of vehicles, namely: type A ambulance (transport ambulance), type B (basic support), type C (rescue ambulance), type D (advanced support), type E (air ambulances) and F (waterway ambulances)<sup>8</sup>. Ordinance MS, Ministry Office (GM) n. 2048 of November 5, 2002, cap. 04, item 1.3; lists the Specific training of Aeromedical Transport Professionals. In item 2.1, it defines that aeromedical aircraft are classified as type E, both helicopter (rotating wing) and airplane (fixed wing), duly equipped with equipment approved by the National Civil Aviation Agency<sup>9</sup>.

The use of a type E ambulance (air ambulance) is necessary due to the agility required in the care of critically ill patients, in conditions which it would be unfeasible to carry out by land transport, due to traffic and conditions that make it more difficult to access, such as geographic and climatic barriers, among other challenges. The aircraft has limited space and the patient is positioned on the stretcher or board in the transverse direction, which increases the challenges for the multidisciplinary team that works in this sector, including the nurse<sup>10</sup>.

Resolution COFEN<sup>11</sup> n. 660/2020, provides guidelines regarding the training of aeromedical or aerospace nurses, as this training corresponds to a nursing specialty. The Brazilian Civil Aviation Regulation (RBAC-90) describes State aviation (Public Air Unit-UAP) in special air operations. In its subpart C – requirements for airmen, sub-items: 90.43 (exercise of the medical support operator function) and 90.45 (onboard health professional); describe the distinctions in the activities of the aerospace

healthcare professional and requirements for serving in the UAP.

The speed at which the patient needs to be directed to appropriate and definitive treatment is essential for survival. In this context, numerous factors interfere in the time of pre-hospital care, such as: traffic, time of day, place where the patient will be referred, among others. The Aeromedical Service emerges as a modality of fundamental importance, given the need to establish an effective treatment in the shortest possible time, with a view to assessment, rapid admission, early diagnosis and definitive treatment<sup>12</sup>.

Given the above, the study aimed to investigate the skills and difficulties in the role of nurses in aeromedical transport.

## II. METHOD

Descriptive, exploratory study with a qualitative approach. Companies related to the aeromedical transport service in Belém, State of Pará, Brazil, from October to November 2019 were chosen as the research field. All nurses working in the service were invited to participate in the research. Those who agreed to participate in the study were asked to sign the Informed Consent Form.

Of a total of 10 nurses, seven were interviewed until saturation around the thematic axes. As inclusion criteria, working time of at least one year, professionals of both genders and academic training in Nursing were considered.

For data collection, a semi-structured interview was used as a technique, with an interview script prepared with open questions prepared by the researchers as an instrument for collection, allowing the interviewees to discuss the questions without pre-determined time for answers.

Nursing course students, previously trained to apply the research instrument, participated in the data collection. Data collection was carried out on the premises of the units through a semi-structured interview recorded in audio.

The contents of the interviews were transcribed in an original way, preserving the expressions used by the participants. However, in order to use them as a unit of analysis, spelling corrections were made, language vices, exchange or absence of letters were excluded, while

maintaining the linguistic vices that present meaning in the context of speech.

The data were treated and the results constructed according to the methodological framework of thematic content analysis proposed by (Bardin 2016), which enabled the identification and construction of four thematic categories: "Assignments, competences and difficulties in the performance of nurses in aeromedical transport; Considering the epidemiological reality and regional differences; The nurse as a member of the multidisciplinary team; prerequisites for performance." The categories were previously delimited due to the thematic axes of the interview script, being confirmed after in-depth analysis of the speeches.

Free and Informed Consent Term was individually explained to the research participants, who were coded and identified with the following names: "E 1", "E 2", "E 3..." respectively, in which, "E" represents "Nurse" and the number the order in which they were approached, aiming to preserve the anonymity and confidentiality of the information.

Resolutions n. 466/12 and n. 510/16 of the National Health Council (CNS) and only after the appreciation and approval of the Research Ethics Committee (CEP), with the Certificate of Presentation and Ethical Appreciation (CAAE: 18760819.7000.5173) and opinion number n. 3,528,052 the research was started, respecting the norms of the National Research Ethics Commission (CONEP) and the National Health Council (CNS).

## III. RESULTS

It was found that among the seven participants, four were male and three female. The age ranged from 27 to 55 years, and the individuals were mostly married (71.4%). 100% of the participants have a Lato Sensu postgraduate degree, with seniority ranging from 1 to 10 years of experience.

Participants were characterized according to marital status, gender, age, postgraduate studies, frequent updating in the area. Of the 10 possible nurses to be interviewed, 7 participated in this study, 01 were unable to participate due to lack of time to conduct the interview, and the others were excluded after applying the inclusion and exclusion criteria.

Table 1 - Characteristics of study participants, according to marital status, gender, age, postgraduate studies, Belém, Pará, 2019.

Code	Age	Gender	Marital status	Postgraduate	Strictu Senu Post Graduation	Update on aeromedic	Update time
E1	44	M	Married	Yes	No	Yes	3Months
E2	47	M	Married	Yes	No	Yes	6Months
E3	27	M	Married	Yes	No	Yes	9Months
E4	55	F	Single	Yes	Yes	Yes	3Months
E5	46	F	Married	Yes	No	Yes	3Months
E6	43	F	Single	Yes	No	Yes	3Months
E7	45	M	Married	Yes	No	Yes	4Months

Source: Field research, prepared by the authors, 2019.

The corpus of the study made it possible to organize the content into four empirical categories, grouped according to the theme extracted from the responses: Category 1: "Attributions, competences and difficulties in the role of nurses in aeromedical transport; Category 2: Considering the epidemiological reality and regional differences; Category 3: The nurse as a member of the multidisciplinary team and Category 4: prerequisites for work", which will be presented below.

### Category 1: Attributions, competences and difficulties in the role of nurses in air medical transport

This first category describes the nurses' knowledge regarding the attributions, competences and difficulties experienced in daily life in exercising their profession as a nurse in aeromedical transport, as can be seen in the statements:

*"[...]Nurse who is on board must be a skilled nursing practitioner, so that there is no interruption in the treatment in terms of medication and monitoring". (E2)*

*"[...] The first would be our management of the aeromedical service as a whole! The nurse's role is mainly in the pre-flight, which predicts what you can use, the trans is during transport, works in transport evaluating, monitoring, administering medication, among other actions, and post-flight, when you already deliver the patient for the ground ambulance for example". (E1), (E4), (E7)*

*"[...] We cannot even, by law, put anyone to fly, we have to obey the COFEN legislation that supports us". (E2) "[...] Nurses have to be qualified for such transport, trained, he is the transport manager, as well as assistant and caregiver in the same period of time". (E3)*

*"[...] I consider it a challenge not to have a dedicated aircraft, an aircraft exclusively for aeromedical transport, because the aircraft we use here is from the State security air group, so sometimes we do not provide assistance because of not having an available aircraft". (E5)*

*"[...] I see limited space as a challenge! This is part of the difficulty, and also, I don't believe it is a difficulty, but the devaluation, because it is a very important service and it is not recognized". (E6)*

### Category 2: Considering the epidemiological reality and regional differences

In relation to category two, we sought to identify the nurses' knowledge about the difficulty in performing the nursing service in aeromedical transport in view of the peculiarity of our region and what are the skills and difficulties in working in this environment. It was observed that nurses have similar thoughts about this difficulty.

*"[...] In our region, we have to remember that we have a continental State, the size of a continent, larger than many countries in Europe, and in its geography most are*

*fluvial, we have Marajó as our location. performance, where we serve more often.” (E4), (E7)*

*“[...] Marajó, especially because it is very lacking in a place of service, a municipality with great difficulty in transporting, getting here, so I think that aeromedical services are extremely important, because access is all by water, there are locations which is 12 to 24 hours by ship to get here”. (E6)*

*“[...] So, Portel, for example, it should take a 12-hour ship trip to get here, so we see the regions with restricted access to health as a difficulty, so the aeromedic comes to help a lot in this transport which I believe will increase the survival of these patients”. (E6)*

*“[...] 1 hour to bring from Breves, Portel, these faraway places, aeromedical transport is necessary for this region, we have 144 municipalities, so of these 144, 74 are in the coverage, aeromedical rescue coverage worksheet ” (E4)*

*“[...] As it is a very characteristic region of the Amazon, there are certain runways that are not approved, and this ends up being restricted, during the take-off and landing period in certain locations”. (E3)*

*“[...] Aircraft, they can't fly more than 2 hours, they don't have the flight autonomy to fly all that and in many places you only get there in 24 hours”. (E5) “[...] Climatic variations are also a factor that makes it difficult, the other is the geographic issue of our state, the geographic distance from our state is very large”. (E1)*

*“[...] The aeromedical service in the Amazon turns out to be the patient's last resort in some circumstances (pause). We end up being the savior of the homeland, so the people from the aeromedical team act responsibly, carrying out clinical evaluation, evaluating the case, flight time”. (E2)*

### Category 3: The nurse as a member of the multidisciplinary team

In this category, the importance of the nurse as a member of the multidisciplinary team was verified, understanding that the results of their attitude towards

other professionals and the patient's clinical condition may result in better patient care and better outcomes, as can if you observe in their speeches:

*“[...] He has vast knowledge within his area and this should be put in the best, rational and systematic way possible, for the patient to have better care, given that they are critical patients, and the outcome depends on this absdagem ”. (E1)*

*“[...] Without a nurse, there is no aeromedical person, because that way, the nurse has a managerial function, an administrative function, forecasting and provision of materials and equipment, among other actions”. (E2)*

*“[...] A great conductor will often manage the whole issue of patient monitoring, vital signs, will check water control, how much is being eliminated, in addition to effective communication with the medical professional throughout the process carriage”. (E3)*

*“[...] The nurse would not be able to carry out the rescue alone, so it is a team that completes itself”. (E4)*

*“[...] The doctor has his behavior, the nurse his own, but they are always discussing the case. I think both are fundamental pieces, both the doctor and the nurse, not only in aeromedical medicine, but in health, regardless of where the care takes place, one cannot live without the other”. (E6), (E7)*

*“The safe transport of the patient, then we get into those international safety goals. The patient's survival, and what you do right or wrong will impact survival.” (E3) (E4)*

### Category 4: prerequisites for acting

In this category, nurses were asked what the importance of professional qualification would be and what requirements they would need to be able to work in aeromedical transport, in order to provide a quality service. In this understanding, the following speeches emerged:

*“Ideally, he should be an intensivist, an urgent care worker! Who has a degree from the Institute of Education and Health of São Paulo. Even because aerial physiology is*

*not the physiology we learn at the gym[...]" (E2), (E3)*

*"[...] A postgraduate course in urgency and emergency, some specific pre-hospital courses, because it is a pre-hospital service, an operational crew course". (E6) "He has to be aware of the rescue, he has to be aware of the actions and impacts of altitude on the patient and on the nurse [...]" (E3), (E4)*

*"Well, first thing you have to like the emergency service, if you don't like it you don't take chances, the second thing, you don't have to be afraid of flying, if you're afraid of flying you can't work in this service either, and the third thing is for you to really know what you are doing, study, seek research, dedicate yourself and improve every day. But without liking the urgency and not liking to fly, you can't work in aeromedical! [...]" (E5)*

#### IV. DISCUSSION

Regarding the characterization of nurses, in Brazil, several studies have shown that this profession is mostly marked by the presence of women. However, in the aerospace environment this profile has been different, with a marked presence of male individuals<sup>13</sup>.

This result is in line with other research that consider the presence of men in some nursing services, such as the Intensive Care Unit, Psychiatric Emergency and Emergency Services and Mobile Emergency Service, making considerations that seem to link this presence to physical fitness, preparation and management of emotions<sup>14,15</sup>.

As for age, the interviewees are nurses in their professional maturity stage, which is characterized by their full capacity to develop their cognitive, practical and technical functions<sup>16</sup>.

Observing the professional experience, with regard to the length of experience in the service, it was evident that the interviewees are professionals with significant experience in aeromedical transport, in which the average number of years of experience is six years. From these results, it is possible to infer that most participants had considerable professional experience, results similar to those described in a study on the profile of nurses in the Mobile Emergency Care Service of Santa Catarina, Brazil<sup>17</sup>.

Regarding the type of institution and aircraft in which the nurses are manned, the performance in public services (69%) and in rotary-wing aircraft (64%) stood out in the metropolitan region of Belém. This result is in line with the study by Pin (2018)<sup>16</sup>, in which the performance in public service (68%) and in rotary-wing aircraft (54%) was also observed. Here, it is worth noting that the greater amount of public services in Brazil can be explained by the link of professionals and agreements with public security sectors, the Military Police, such as the partnership established by the health department and the State Public Security Air Group of Pará-GRAESP.

It is described that the use of aircraft is shared between health and public safety services, being used not only for emergency care, but also in police operations, multi-mission, inspection and troop transport. This sometimes makes the logistics of work hampered by having to assemble the equipment and dismantle it at the end of its use due to the fact that the State of Pará does not have an aircraft exclusively dedicated to aeromedical transport<sup>16</sup>.

In Pará, where we have the Marajó archipelago, places of difficult access, geographic barriers, lack of minimum infrastructure for fixed-wing aircraft take-offs and landings, aeromedical transport by rotary-wing aircraft becomes effective due to its particularities and adaptable conditions in the environment be favorable for these purposes, as they facilitate movement and access to difficult-to-service places, where they can land vertically without the need for an approved runway or according to the standards suggested by the National Civil Aviation Agency-ANAC for landing<sup>16</sup>.

With regard to academic training, no nurse is a specialist in Aerospace Nursing, but all respondents had a lato sensu postgraduate degree in Intensive Care, and 40% of them were also specialists in Urgency and Emergency.

Given these results, it is important to consider that specialization courses in Aerospace Nursing are still scarce in Brazil, especially in the northern region of the country, considering that this is a relatively new specialty. In addition, many aerotactic nurses reported having previous experiences in other intensive care environments, which justifies taking specialization courses in these areas<sup>7</sup>.

With the conclusion of the study, participants' search for additional and essential courses to be able to work in the service stands out, such as: Advanced Life Support, the Pre-hospital Trauma Life Support® (PHTLS) which qualifies professionals for trauma care, and the Advanced Cardiac Life Support® (ACLS), which aims to develop

life support skills for emergency cardiovascular care (ACE) for example<sup>19</sup>.

Regarding the duties of the nurse in aeromedical transport, it can be observed that the professional works in the three phases of transport, but during the interview the one that stood out the most were the managerial functions of their training, in the pre-flight with the checking of materials, in-flight with organization of documents and hemodynamic monitoring of the patient and even post-flight with organization of the aircraft after use<sup>20</sup>.

Another factor analyzed, highlighted by the interviewees, is that the nurse can be seen as the conductor of the aeromedical service, as he is the professional who will manage all the monitoring of the patient, whether in terms of hemodynamics, vital signs, fluid and electrolyte balance, exams, documents, team management, in addition to being an excellent articulator of patient care processes, exerting a direct influence on the outcome of the care provided<sup>3</sup>.

In relation to the competences of the air tactical nurse, two axes were highlighted, the managerial and the assistance one. There is a consensus among the interviewees that the organization and direction of direct care to critically ill patients is the exclusive competence of nurses and where activities of greater technical complexity will be performed, such as monitoring, checking vital signs, listing the needs of that patient according to with its priority in details, so that it is possible to provide more adequate nursing care, with a view to transporting the positive outcome<sup>21</sup>.

In the meantime, it is up to the nurse to know how to act in the field of aeromedical transport, receiving the patient from their arrival on the aircraft, until delivery at the hospital that will receive them, as well as evaluating and systematizing the processes that involve the priorities for each client, performing assistance valuing safety and integrity, offering information on all procedures that will be performed before, during or after transport, without losing sight of the need to assess all clinical parameters throughout transport<sup>14</sup>.

It is noteworthy that in the care of critically ill patients in a conventional ICU, professionals face problems in patient management and care, whereas in the air ICU, in addition to conventional difficulties, different challenges and difficulties emerge with a greater degree of complexity, either due to the unavailability of resources, materials or even limited space to work, because of this, the communication and integration of the air team must be aligned and harmonic, so that there are no overlapping, disharmonious actions that can directly impact the patient's prognosis<sup>14</sup>.

It is described that the restricted space and the lack of manpower to work in the airspace are the greatest difficulties for nurses, whether in aeromedical transport or rescue, due to the limited space and a restricted collection of equipment and supplies, complications become greater degrees of difficulty. Furthermore, space inside the aircraft is a stressful factor due to the reduced mobility of professionals, which has been described as a factor that generates discomfort in the team<sup>3</sup>.

It should be noted that during the flight, which it is possible to verify in the reports, a lower frequency of medication administration, except for continuous use drugs such as vasoactives, analgesics, chronotropics, cardiotonics and replacements. Which may indicate that, for the most part, the patient is already stabilized on the ground, aiming to carry out the least number of procedures during the flight. On the other hand, the procedure that seems to be most frequently performed is peripheral venipuncture, for volume replacement or administration of medications. However, this procedure is mostly performed in the pre-flight phase<sup>4</sup>.

As described, the nurse has responsibilities in the three stages that involve a quality flight. In the post-flight, actions focus on replacing materials and checking the equipment used, according to institutional protocol. As well as in the disinfection of used materials, referrals for processing and sterilization, and replacement of what was used. The nurse in the post-flight is also responsible for passing on information via established protocols to the next on-call physician, with the patient's data being recorded in the medical record and requesting the signature of the physician responsible for the patient at the destination hospital<sup>14</sup>.

In Japan, from 2004 to 2011, the Japan Trauma Data Bank (JTDB) verified that 2,090 patients were airlifted to 114 reference hospitals in emergencies in the country. Rotary-wing aircraft were among the most effective modality, as they had a 73.9% survival rate when compared to patients who used conventional ground transport. Furthermore, in the United States, in a study with the same profile, it was shown that the mortality rate associated with the speed of transport was 39%, which study converges with the findings of the present research, when we verified in the interviewees' speeches, statements that confirm the importance of this type of service, impacting the survival of patients.

In our region, Ilha do Marajó, where the transport of critically ill patients is the most suitable and accessible aeromedical transport, this aspect gains greater relevance, as it is more effective mainly due to the precariousness, geographic barriers and lack of infrastructure, present in

various regions of the country, but more evident in the north and northeast<sup>4</sup>.

Leadership was another highlighted point in the speeches of those surveyed. On this subject, leadership is considered an essential skill for nurses described in several studies, and in aeromedical transport this would be no different. Within the scope of the nurse's work, in the context of care in a multidisciplinary team, the nurse works together with the doctor who maintains direct contact with the aircraft pilots, aiming at quality care, communication that involves from the decision to use medications to be performed, even the way the pilot will land, requiring the nurse to have a clear and precise vision of their attributions and competences during aeromedical transport<sup>22</sup>.

During the research, the speeches tend towards a consensus, the nurse is a leader in aeromedical transport. Effective communication between the multidisciplinary team must be pursued by the entire team. It is important to maintain the cordiality and respect for the autonomy of professionals so that there is no negative interference in the other member's conduct, causing disharmony and mismatch in care actions and interprofessional relationships, with a view to completing the proposal with success and quality.

## V. CONCLUSION

In view of the proposed objective, it was possible to identify the understanding that air tactical nurses have about their role in the multidisciplinary team of aeromedical transport. From the results, we understand that the most relevant points on the subject were addressed, as well as the research objectives were achieved.

It was evident that the nurse works in the three moments of aeromedical transport, with an emphasis on managerial functions, in the pre-flight phase, and assistance in the intra- and post-flight phase.

The aerotactic nurse assumes a prominent position, due to the influence that the care they exercise has on the multidisciplinary team and, consequently, on patients. Nurses in aeromedical transport work with a multidisciplinary team, in which the work is full of challenges, requiring knowledge, skills and attitudes to carry out qualitative aerospace care. The main one is being able to work in a limited space with reduced movement.

There was a need for a high degree of training for professionals working in the aerospace environment, which demands a process built since graduation, marked by subsequent improvement, with skills, specializations,

focused on intensive care, urgency and specific knowledge of dynamics of air transport.

Considering the benefits of aeromedical transport in assisting victims in critical condition, in places with difficult access, it is worth emphasizing the importance of this means of transport for all other services in this area.

One of the problems encountered is the operation and maintenance cost of this service. However, it is noticeable that this type of transport proves to be more effective than other modalities, reducing the mortality rate of patients. In the State of Pará, a demographically very extensive region of Brazil, in which a large part of the region is surrounded by water, arriving or leaving certain territories is only possible by means of a waterway vessel, which would cause a great delay in the service. Knowing the skills and difficulties of the nurse's role in aeromedical transport will contribute to better preparation of the team to serve this clientele.

The findings of this research allow us to affirm that the Aeromedical Transport nurse stands out as an element that works with a holistic view in meeting the individual's health needs. Its practice must go beyond the mechanical bases, adding expression and subjectivity in providing care.

In this field of action, interdisciplinarity is a fundamental component. The nurse, as a member of the multidisciplinary health team that transports patients by aircraft, is faced with demands and challenges that require these professionals to have skills that support them in adverse situations and independence in decision-making, in addition to a high degree of knowledge, attitudes and specific skills to perform this role.

Aeromedical transport is one of the most significant acquisitions in aviation and emergency care, especially in remote areas of Brazil, where geographic barriers tend to increase the degree of difficulty. Of military origin, for soldiers wounded in combat, it had marked periods in the wars, with a notable technological impulse. What has been learned in the war camps and transposed into medicine and civilian health allows for the safe and increasingly effective use of this resource. Given this, it is expected that the knowledge produced with this research, instigate aerotactic nurses to reflect on their practice and serve as support for other studies that cover this theme from other perspectives.

It should be noted that, like all scientific studies, this research has some limitations that can be minimized in future work. One of them is the reduced number of participants, from a specific region of Brazil, making it difficult to generalize the results obtained. Another limitation, despite all the precautions, concerns the

possible information biases on the part of the interviewees, such as lack of attention or understanding, rush to respond, self-censorship and fear of being identified through the statements, considering the fact of being few participants in this scenario in the State. However, these limitations in no way devalued the results obtained and the conclusions we reached.

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